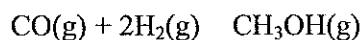


Methanol is manufactured from carbon monoxide and hydrogen using similar conditions to those used in the manufacture of ammonia by the Haber process.

*Leave
blank*

The equation for the manufacture of methanol is



This reaction is exothermic.

The reaction conditions are a pressure of 200 atm and a temperature of 400 °C.

(a) State **two** advantages of using a pressure higher than 200 atm.

1

2

(2)

(b) (i) State **one** advantage of using a temperature lower than 400 °C.

Explain your answer.

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(4)

(ii) State **one** disadvantage of using a temperature lower than 400 °C.

Explain your answer.

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(2)

Q10

(Total 8 marks)

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